

What is claimed is:

1. An instantaneous wire interruption detection system for an electrical system of a vehicle, comprising:

a signal abnormality detection portion for detecting a signal abnormality, the signal abnormality defined as a change from a normal state to an abnormal state of an electric signal input via a signal wire to the signal abnormality detection portion from a signal generation portion that generates electric signals; and

a holding portion for latching the detection result as a latch signal when the signal abnormality detection portion detects the signal abnormality.

2. The instantaneous wire interruption detection system for an electrical system of a vehicle according to claim 1, further comprising:

a warning device for issuing a warning when the signal abnormality is detected.

3. The instantaneous wire interruption detection system for an electrical system of a vehicle according to claim 1, further comprising:

an output circuit for outputting the latch signal.

4. The instantaneous wire interruption detection system for an electrical system of a vehicle according to claim 3, further comprising:

an external connection unit for being connected to the output circuit so as to receive the latch signal, wherein the external connection unit is provided with the warning device that issues the warning when the signal abnormality is detected.

5. The instantaneous wire interruption detection system for an electrical system of a vehicle according to claim 1, wherein

the electric signal generated by the signal generation portion is a signal that accords with a determined communication protocol, and

the signal abnormality detection portion, when the signal that accords with the determined communication protocol is being transmitted from the signal generation portion, determines the normal state to be a state in which the signal that accords with the determined communication protocol is being input continuously, and determines the abnormal state to be a state in which the signal that accords with the determined communication protocol is interrupted, despite the fact that the signal generation portion is transmitting the signal that accords with the determined communication protocol.

6. The instantaneous wire interruption detection system for an electrical system of a vehicle according to claim 1, wherein

the electric signal generated by the signal generation portion is a digital pulse signal, and

the signal abnormality detection portion, when the pulse signal is being transmitted from the signal generation portion, determines the normal state to be a state in which the pulse signal is being input continuously at a fixed time interval, and determines the abnormal state to be, one of, a state in which the pulse signal is input at a time interval longer than the fixed time interval, and a state in which the pulse signal is interrupted, despite the fact that the signal generation portion is transmitting the pulse signal.

7. The instantaneous wire interruption detection system for an electrical system of a vehicle according to claim 1, wherein

the electric signal generated by the signal generation portion is a digital signal that is maintained at a fixed, ON state signal level, and

the signal abnormality detection portion, when the digital signal is being transmitted from the signal generation portion, determines the normal state to be a state in which the digital signal is being input in the maintained ON state, and determines the abnormal state to

be a state in which the digital signal is interrupted, despite the fact that the signal generation portion is transmitting the pulse signal.

8. The instantaneous wire interruption detection system for an electrical system of a vehicle according to claim 1, wherein

the electric signal generated by the signal generation portion is an analogue signal, and

the signal abnormality detection portion, when the analogue signal is being transmitted from the signal generation portion, determines the normal state to be a state in which the analogue signal is being input continuously, and determines the abnormal state to be a state in which the analogue signal is interrupted, despite the fact that the signal generation portion is transmitting the analogue signal.

9. An instantaneous wire interruption detection system for an electrical system of a vehicle, comprising:

a signal abnormality detection portion for detecting a signal abnormality, the signal abnormality being defined as a change from a normal state to an abnormal state of an electric signal input wirelessly to the signal abnormality detection portion from a signal generation portion that generates electric signals; and

a holding portion for latching the detection result as a latch signal when the signal abnormality detection portion detects the signal abnormality.

10. The instantaneous wire interruption detection system for an electrical system of a vehicle according to claim 9, further comprising:

a warning device for issuing a warning when the signal abnormality is detected.

11. The instantaneous wire interruption detection system for an electrical system of a vehicle according to claim 9, further comprising:

an output circuit for outputting the latch signal.

12. The instantaneous wire interruption detection system for an electrical system of a vehicle according to claim 11, further comprising:

an external connection unit for being connected to the output circuit so as to receive the latch signal, wherein the external connection unit is provided with the warning device that issues the warning when the signal abnormality is detected.

13. The instantaneous wire interruption detection system for an electrical system of a vehicle according to claim 9, wherein

the electric signal generated by the signal generation portion is a signal that accords with a determined communication protocol, and

the signal abnormality detection portion, when the signal that accords with the determined communication protocol is being transmitted from the signal generation portion, determines the normal state to be a state in which the signal that accords with the determined communication protocol is being input continuously, and determines the abnormal state to be a state in which the signal that accords with the determined communication protocol is interrupted, despite the fact that the signal generation portion is transmitting the signal that accords with the determined communication protocol.

14. The instantaneous wire interruption detection system for an electrical system of a vehicle according to claim 9, wherein

the electric signal generated by the signal generation portion is a digital pulse signal, and

the signal abnormality detection portion, when the pulse signal is being transmitted from the signal generation portion, determines the normal state to be a state in which the pulse signal is being input

continuously at a fixed time interval, and determines the abnormal state to be, one of, a state in which the pulse signal is input at a time interval longer than the fixed time interval, and a state in which the pulse signal is interrupted, despite the fact that the signal generation portion is transmitting the pulse signal.

15. The instantaneous wire interruption detection system for an electrical system of a vehicle according to claim 9, wherein

the electric signal generated by the signal generation portion is a digital signal that is maintained at a fixed, ON state signal level, and

the signal abnormality detection portion, when the digital signal is being transmitted from the signal generation portion, determines the normal state to be a state in which the digital signal is being input in the maintained ON state, and determines the abnormal state to be a state in which the digital signal is interrupted, despite the fact that the signal generation portion is transmitting the pulse signal.

16. The instantaneous wire interruption detection system for an electrical system of a vehicle according to claim 1, wherein

the electric signal generated by the signal generation portion is an analogue signal, and

the signal abnormality detection portion, when the analogue signal is being transmitted from the signal generation portion, determines the normal state to be a state in which the analogue signal is being input continuously, and determines the abnormal state to be a state in which the analogue signal is interrupted, despite the fact that the signal generation portion is transmitting the analogue signal.